

IN THE CLAIMS

Please cancel Claims 1-14 without prejudice, and replace by the following

new Claims:

--15. An apparatus for performing an integrated process for the production of acetic acid and/or vinyl acetate, which comprises:

a first reaction zone for contacting a gaseous feedstock comprising ethylene and/or ethane and optionally steam with a molecular oxygen-containing gas in the presence of a catalyst active for the oxidation of ethylene to acetic acid and/or ethane to acetic acid and ethylene to produce a first gaseous product stream comprising acetic acid, water and ethylene, either as unreacted ethylene and/or as co-produced ethylene, and optionally also ethane, carbon monoxide, carbon dioxide and/or nitrogen;

a second reaction zone for contacting in the presence or absence of additional ethylene and/or acetic acid, at least a portion of the first gaseous product stream comprising at least acetic acid and ethylene and optionally also one or more of water, ethane, carbon monoxide, carbon dioxide and/or nitrogen with a molecular oxygen-containing gas in the presence of a catalyst active for the production of vinyl acetate to produce a second product stream comprising vinyl acetate, water, acetic acid and optionally ethylene, said contacting in said second reaction zone being carried out heterogeneously with the ethylene, acetic acid and molecular oxygen-containing gas being present in the gas phase;

a separator for separating the product stream from step (b) by distillation

into an overhead azeotrope fraction comprising vinyl acetate and water and a base fraction comprising acetic acid;

a first distillation column through which said base fraction is passed;

a decanter through which an overhead stream from said first distillation column is passed.

16. An apparatus according to claim 15, wherein said first reaction zone comprises a single reactor.

17. An apparatus according to claim 15, wherein said first reaction zone comprises several reactors in parallel or in series.

18. An apparatus according to claim 15, wherein a heat exchanger is provided between said first reaction zone and said second reaction zone.

19. An apparatus according to claim 15, wherein said first and second reaction zones are contained within the same vessel.

20. An apparatus according to claim 15, wherein said second reaction zone comprises a single reactor.

21. An apparatus according to claim 15, wherein said second reaction zone comprises several reactors in parallel or in series.

22. An apparatus according to claim 15, wherein a heat exchanger is provided between said second reaction zone and said separator.

23. An apparatus according to claim 15, and further comprising a vaporizer through which base stream from said first distillation column is passed.

24. An apparatus according to claim 23, and further comprising a second

distillation column through which a vapor fraction from said vaporizer is passed.

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25. An apparatus according to claim 15, wherein said first reaction zone comprises a fixed bed.

12/26
26. An apparatus according to claim 15, wherein said first reaction zone comprises a fluidized bed.

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27. An apparatus according to claim 15, wherein said second reaction zone comprises a fixed bed.

14/28
28. An apparatus according to claim 15, wherein said second reaction zone comprises a fluidized bed.--

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